

1 Q Well that's based on the budget you've seen,
2 obviously, is what I'm asking.

3 A Yes. Yes.

4 MR. BRADY: Nothing further, Your Honor.

5 JUDGE FRYSIK: Okay. Thank you very much.

6 MR. BRYAN: Thank you.

7 JUDGE FRYSIK: Mr. Bryan, you are excused.

8 MR. CARR: Your Honor, Mr. Mertz is ready for the
9 cross examination.

10 JUDGE FRYSIK: Mr. Mertz, before you sit down, let
11 me take your oath. Please raise your right hand.
12 Whereupon,

13 RICHARD H. MERTZ
14 having first been duly sworn, was called as a witness herein
15 and was examined and testified as follows:

16 JUDGE FRYSIK: Please have a seat and for the
17 record state your full name and address.

18 MR. MERTZ: Richard H. Mertz. 11907 -- Post Lane,
19 Rockville, Maryland.

20 DIRECT EXAMINATION

21 BY MR. BRADY:

22 Q Mr. Mertz, I'm Tim Brady, representing SBH. In your
23 direct testimony, Mr. Mertz, you indicated that you had -- had
24 constructed a number of stations. Is that correct?

25 A That's true.

1 Q Can you tell me approximately how many?

2 A It's well over fifteen.

3 Q Okay.

4 A Just transmitter sites and about thirty five studios
5 and transmitter -- and studio transmitter complexes.

6 Q Okay. Okay. I think I can -- and how many -- how
7 many of those would have been FM, out of the total? I'm not
8 sure I got the totals. Let me make sure I understand

9 A It's -- it's well over fifteen transmitter sites, I
10 think.

11 Q Transmitter sites, okay. And studio --

12 A Transmitter sites, approximately. Okay?

13 Q Um-hum. Oh, yeah.

14 A I'd say about two-thirds of them were FM.

15 Q And how many studio sites did you --

16 A It's got to be thirty or thirty five. I mean, we're
17 talking twenty five years of building studios.

18 Q Okay. In the -- in the station -- the transmitter
19 site you constructed, I presume all of those would have
20 included the erection of a tower?

21 A Not in all cases, no.

22 Q Not in all cases. Okay. And, in the cases in which
23 towers were installed, how many -- what percentage of those
24 would have been towers that were three hundred feet and
25 higher?

1 A Oh, about half.

2 Q And that would be AM and FM in terms of towers?

3 Okay. And, how many of those that -- that involved
4 construction of a tower three hundred feet or higher -- how
5 many of those were constructed using a Rohn tubular tower? If
6 you can recall.

7 A I don't remember the manufacturers.

8 Q Okay. Do you know how many of them were constructed
9 using a tubular rather than a solid steel rod ledge?

10 A I'd say about thirty-five, forty percent of them.

11 Q Do you recall what -- what other towers -- have you
12 installed tower -- do you recall whether you have installed
13 Rohn tower before?

14 A Not off the top of my head, no.

15 Q Okay.

16 A But I'm familiar with them from other communications
17 work, not broadcast.

18 Q Okay. But -- so, are you familiar with Rohn tower
19 in terms of their -- their taller -- the taller tower
20 structures that are used for like AM or FM or television?

21 A Yeah.

22 Q Okay. And, what other tower manufacturers do -- or
23 vendors do you --you use -- have you purchased towers from to
24 install?

25 A Stainless, World, Utility Tower, some of those, I

1 don't remember.

2 Q In those instances that you referred to, the
3 fifteen, say, tower transmitter site installations, in those
4 instances do -- does the owner of the station specify the
5 tower manufacturer or the type of tower or do you usually make
6 a written recommendation?

7 A It could work either way. If they prefer a specific
8 manufacturer, we will go with what they like.

9 Q Okay. Do you recall ever having recommended the use
10 of a Rohn tubular tower for a three hundred foot installation?

11 A I haven't personally but I know of engineers that
12 have.

13 Q With respect -- with respect to the transmitter
14 sites that you had constructed for FM stations, which I think
15 you said is about two-thirds is the number you gave me, were
16 any of those constructed using a Henry transmitter?

17 A No.

18 Q Do -- what -- what brands of transmitter have you --
19 have you used in those installations that you recall?

20 A It varies. It could be QEI, CCA, Harris,
21 Continental, BE, the type of transmitter is irrelevant as long
22 as it meets the requirements of the construction permit.

23 Q Relative to the Continental or the others you've
24 listed here, the QEI, CCA and Harris, would you -- would the
25 -- would the Henry transmitter be considered a lower cost

1 transmitter?

2 A It is lower cost. But it still meets the
3 requirements of the FCC.

4 Q Right. Sure.

5 A For use in this service.

6 Q What -- what accounts, from your opinion, what --
7 what accounts for the cost difference between the Henry and
8 these others that you've mentioned? What would account for
9 the difference?

10 A Well, what we're doing is marrying to a QEI exciter
11 and a Henry power amplifier. A Harris transmitter is nothing
12 more than a Harris exciter and a Harris transmitter. We have
13 on occasion specified a Harris power amplified and a BE
14 exciter or Collins exciter, depending on the choice of the
15 station owner. I mean, we're not married to anyone. I'm in
16 the consulting business. I'd make a recommendation but if the
17 client wants to do something else, we do it, as long as it
18 fulfills the FCC's requirements and the Henry transmitter is
19 type accepted and so is the QEI exciter. So, as far as I'm
20 concerned, there's really not much difference.

21 Q There -- so you don't have any opinion as to what --
22 whether or not there is a basis for the cost difference
23 between a Henry transmitter and one of the others?

24 A Different manufacturers. They may have different
25 features in one and different features in the other. Depends

1 on what features are required for the installation. If you
2 want just the basic power amplifier, the Henry is a good
3 choice.

4 Q Would the Q --

5 A QEI

6 Q QEI -- would that be considered a lower cost
7 transmitter or a higher cost?

8 A That's -- actually, the QEI is medium cost.

9 Q And what about the CCA?

10 A It's medium.

11 Q Okay. And then Harris would be high end.

12 A Harris is higher.

13 Q And Continental is less than --

14 A Even higher.

15 Q Higher than Harris?

16 A Yeah. In some cases. Depending on the transmitter
17 and the accessories that go with it.

18 Q Okay.

19 A And the top of the heap is the --

20 Q With respect to the -- the towers you've
21 constructed, FM towers you've constructed, for three hundred
22 feet or higher, how many of those have been constructed using
23 a 7/8" transmission line?

24 A The tower's not constructed with transmission line.

25 Q In a configuration. I mean, in the context which

1 | you've constructed that the -- the transmitter site, let's
2 | say, when you constructed a transmitter site for an FM station
3 | where the tower was three hundred feet high or higher --

4 | A I don't recall a particular situation. We designed
5 | them based on the power that's required and, as I said in my
6 | testimony, there's a specific rule of thumb that we use for
7 | determining the -- capabilities of the coaxial cable.

8 | Q Okay, well, I recall that and I recall the rule of
9 | thumb that any -- are -- will you use a 7/8" line at any -- at
10 | any time that it was sufficient to meet the power requirement?

11 | A Um-hum.

12 | Q You would?

13 | A Yeah.

14 | Q And so, is it your opinion, or at least your
15 | practice, to use a 5/8 -- a 1 5/8" or 1 1/4" line only when
16 | the power requirement demands that?

17 | A Yeah.

18 | Q You don't ever do it for purposes of the greater
19 | efficiency of the line?

20 | A It depends on how long the line is. In the case of
21 | a three hundred foot line, there's a small difference in
22 | efficiency but the transmitter is large enough to handle that
23 | difference.

24 | Q Okay. So -- so that would -- the efficiency of the
25 | line would come into play somewhere above three hundred feet,

1 in your practice?

2 A Every installation's different. You have to
3 evaluate it and it's a judgement call from there.

4 Q You indicated in your testimony that you write an
5 article for Radio World. Is that correct?

6 A That's correct.

7 Q Are you familiar with a Douglas Farado? I don't
8 know if I'm pronouncing it right. He wrote an article on the
9 recent July 13, 1994 issue of Radio World. Are you familiar
10 with that -- that article?

11 A With respect to what? I may or may not have read
12 it.

13 Q Okay. Let me just show you.

14 A I don't read the whole magazine, I just write for
15 them.

16 Q This is the issue, the July 13th and -- this is the
17 article.

18 A I have not read this, no.

19 Q Okay. Well, Mr. Farado, I guess is the way you
20 pronounce his name. The article concerns tower installations
21 and how to avoid problems with the tower. And he makes a
22 comment at the bottom of the first paragraph that the type of
23 tower and -- construction installation must be approximate to
24 the topography of the area and must enable the tower to
25 withstand climatological extremes in the area where it's

1 | located.

2 | A Um-hum.

3 | Q Do you agree with that statement?

4 | A That's reasonable, yeah.

5 | Q And, in the article, he identifies certain area --
6 | problem areas that arise with respect to towers and one that
7 | he mentions next, in the second column is lightening, and he
8 | indicates that -- that -- there that the lightening rods
9 | should project above the tower beacon. Is it normal practice
10 | in your case to use lightening rods on the tower?

11 | A The standard kit is a pole. It's about that big in
12 | diameter. It's about three and a quarter feet high. It just
13 | sticks up right above the beacon. And it's grounded to the
14 | tower. That's --

15 | Q Would that be considered good engineering practice?

16 | A That comes with the tower.

17 | Q Is that considered good engineering practice?

18 | A That's pretty standard.

19 | Q The top of the fourth column, he refers to
20 | lightening -- in lightening zone six or higher, lightening
21 | dissipation systems are recommended, highly recommended.
22 | Would you agree with that statement or --

23 | A Their recommended but he's making the
24 | recommendation, I'm not. It depends on the situation. You
25 | can have a high lightening zone and put up the standard

1 package and it works just fine, depending on how well you
2 ground at the base. If you put the standard ground at the
3 base, at times, depending on the location, it's fine. If you
4 have a granite deposit below you, you're -- you're a
5 lightening attractor. It depends on what's below you. If
6 you've got clay below you, I wouldn't bother with it.

7 If you have a granite foundation below you -- I had
8 a -- I worked for a station in Charlotte that was built like
9 that and we had to go to a raise like that because of the
10 problems dealing with being a very good potential for
11 lightening strikes. So you better take -- you can't take --
12 here's what we do, and here's how we build it.

13 And this is locked in granite forever. Each site is
14 different. Each site is unique. It has to be engineered
15 accordingly.

16 Q The -- so -- so you wouldn't agree with the
17 statement he made regarding zones. You would determine the
18 need for the lightening dissipation --

19 A Depending on the site.

20 Q Depending on the geological basis of the site.

21 A Build it. See if you need it. If you need it then
22 you retro fit -- if you need it.

23 Q Well, if you waited until you found out you needed
24 it, you would have already suffered a strike, wouldn't you?

25 A Not necessarily. You could have an inordinate

1 amount of hits on a tower damage that would damage the
2 lightening rod itself at the point, at the very top and on
3 periodic inspection over use of time you see that, then you
4 make a determination. You can talk to the other towers in the
5 area if there are other towers.

6 Q The article continues on page 34 and the next
7 category he discusses on that page, in the left hand column,
8 involves the problems that can be associated with wind.

9 A Um-hum.

10 Q And, he indicates in the second paragraph under that
11 heading that tower construction must take into account both
12 average winds and peak winds. Climatologists can provide the
13 information, he indicates. But, would you agree that in
14 constructing a tower you should take into account the peak
15 winds in addition to the average winds?

16 A They've broken them down to zones if you look as you
17 look in your own catalog and I recommend a specific tower
18 construction for a general area. Normally, you want to hit
19 one of the RS222 D or E specifications, which I believe the
20 tower that specified meets.

21 Q The -- he indicates in the previous paragraph that
22 the most recent release, EIA, which I believe is Electronics
23 Industries Association.

24 A Association. RS222 E, yes.

25 Q There it establishes a minimum wind speed to which a

1 tower must be built. Is that correct?

2 A It had specific tower specifications, yes.

3 Q And that's -- and that's a minimum standard, is it
4 not, in that -- that's what he's suggesting. I'm asking is he
5 accurate about that? Is that a minimum standard?

6 A That is a reference standard, it is not law or
7 requirement. You can build to what you meet -- as long as you
8 meet the building codes. Local building codes might specify
9 RS222 D and you build to that if you want.

10 Q So, you would -- you would take that into account if
11 it was an average wind speed, perhaps. If that was the
12 reference you would take that into account. You would not
13 take in the peak wind?

14 A I would have to look at the area and see what the
15 requirements are. And then it also would be determined with
16 so much radial ice on the tower itself. I would not specify
17 this tower for Mt. Washington and New Hampshire. It's, I
18 mean, a very high wind, two hundred mile an hour situation.
19 In this situation, this seems like an adequate tower. You
20 also need to tell -- looking at this, this fellow is -- works
21 for an insurance company so, of course, he's going to want to
22 make a heavier case than is normally used in the field to
23 bolster what his insurance company's exposure is. So, you
24 know, you've got to consider the source of this article, here.

25 Q Well, that's why I'm asking you if you agree with

1 it, so. I'm not -- I'm not suggesting that he, you know --
2 I'm asking you the question.

3 A I'm trying to explain to you that you don't just
4 say, okay, one statement says this, we put up this tower. It
5 doesn't work that way. We look at each particular situation.
6 What the soil conditions are, what things are, and what the
7 situation is. And you -- your insurance carrier will
8 determine whether they want you to meet RS222 D or RS222 E.
9 I've just done recent tower specifications for the city of
10 Arlington here in Arlington. They required RS222 E and we
11 marked the tower to compliance. We took an existing tower
12 that was four hundred and some odd feet and modified it.

13 Q The -- have you researched the required -- the local
14 zoning requirements in -- or building code requirements in
15 Green County?

16 A No. I didn't feel it was necessary for the
17 estimating process.

18 Q The -- he also suggests that the transmission
19 building and the tower base and the anchors should be fenced,
20 if not the entire property. Is that --

21 A That's standard practice.

22 Q If -- if the entire property -- if the tower's
23 located in a pasture and -- and the entire property's fenced
24 with barb wire and has cattle around it or something of that
25 sort, would you -- would it be standard practice to do

1 additional fencing of the tower?

2 A To fence -- no. To fence a tower base and the
3 anchor pullings. That's all to keep the cows away.

4 Q And how would you do that?

5 A Inexpensive wood fence, chain link fence, whatever
6 they want to use.

7 Q Okay. With reference to your testimony, page 2, the
8 third paragraph, you indicate, referring to Mr. Bryan's
9 application and specifically to E2, the sketch is merely a
10 visual graphic. Could you explain what you mean by merely a
11 visual graphic?

12 A Section 705B requires you show the height above main
13 sea level and the height above ground of where the -- of the
14 antenna site's location. It's merely to give an -- an idea of
15 what the ground elevation is above main sea level and what the
16 tower's elevation is above ground and main sea level and the
17 location of the center of radiation of the FM antenna. Below
18 that is Section 8, which asks for a sketch showing that
19 information, period. And, normally the practice is that we
20 put something that looks like an antenna somewhere and just
21 show the height above average, above ground level. That's it.

22 Q Okay.

23 A It's not required to show any number of bays. In my
24 old practice, we don't specifically say, this is going to be a
25 four bay, we're going to do this. We never do that unless

1 it's been specifically prescribed for some reason and that's
2 not the case here.

3 Q Yeah, the -- you know, you wouldn't -- what you're
4 saying is you would not depict a certain number of bays in the
5 application?

6 A Not necessarily.

7 Q Or make any reference to the number of bays?

8 A No, it's not necessary. It's not required.

9 Q Would you make the determination at the time you
10 prepared the application of the number of bays you were going
11 to use?

12 A No.

13 Q When you were preparing the proposal?

14 A No.

15 Q How would you determine the transmitter output
16 power?

17 A I don't need to for this. You have to make the ERP
18 for the class of station. You don't have -- the Commission,
19 when they issue a construction permit, will not specify the
20 transmitter. The only specifications they show are the --
21 approval requirements. They will not specify the transmitter
22 power output, except in watts and they will not specify the
23 type of antenna unless it's -- I've got a copy of a
24 construction permit I can show you. As far as ignition is
25 concerned, as long as you have the right combination of bays

1 and transmitter and coaxial, that makes the ER peak, they're
2 happy. As long as you can demonstrate within ninety percent
3 or a hundred, you can make between ninety and a hundred and
4 five percent of the power that's required on the construction
5 permit. They don't care. It's irreverent. And that's the
6 point I've made here.

7 Q On page three, if you turn to page three, you
8 indicate that the major components can be selected to fit the
9 economic constrains. What were the economic constraints in
10 this situation? What are you referring to there? Is that a
11 general statement or are you talking about --

12 A It's a general statement.

13 Q Okay. And, in the next sentence, you indicate that
14 in this -- in designing this installation, the use of four
15 bays is recommended. Why would you recommend a four bay
16 antenna for this installation?

17 A It fits very nicely with the center of radiation
18 that was proposed in the application. I've also used four bay
19 antenna configuration's . It has been another one of my rules
20 of thumb. That an even number of bays on the antenna gives
21 you a very good radiation pattern. I've applied this to a
22 station I've built in Baltimore, here in Washington and on --
23 in San Francisco. And, I've gotten very good performance so
24 that's would I would normally recommend or specify.
25 Especially in this case because you can buy a standard

1 antenna, transmitter and so on.

2 Q The -- a two bay antenna would provide you with the
3 same even number of bays, what would be the disadvantage of
4 using a two bay antenna?

5 A It's the radiation pattern that generated by two bay
6 antenna as over a four bay antenna. The two bay antenna, if
7 you look at it sideways, would be fairly broad and -- a lot of
8 energy down to the ground where you don't need it and adds to
9 reflection. So, normally we don't specify a two bay antenna
10 unless the conditions warrant it and that's not the case here.
11 A four bay is a good compromise, because it's got a fairly
12 narrow beam and it gives you very good coverage from that
13 height. It minimizes the ground reflections close to the
14 tower.

15 Q When you -- when you refer in the next sentence to
16 the -- okay. I -- I just -- making sure I didn't have any
17 more questions in that respect. The next sentence indicates
18 that the Henry transmitter on which the estimate was based was
19 a six kilowatt unit?

20 A Um-hum.

21 Q Okay. Doesn't Henry also make a three kilowatt?

22 A Yeah, but I don't have -- in this installation I
23 wouldn't have sufficient transmitter power.

24 Q Right.

25 A To make the ERP using the coaxial I talked about and

1 using the four bay antenna.

2 Q Okay. So, when you're referring to --

3 A See, Henry -- Henry's specifications may come up
4 with a three, that's rated, type approved up to three
5 kilowatts and up to six. If you notice, the other
6 manufacturer's are rated at three and a half to four and
7 others because of this typical consideration. I just pick
8 which would work in this situation.

9 Q So, when you're saying -- when you're referring to
10 Bryan's estimate, you're referring to the estimate that you've
11 prepared for him that's attached.

12 A That's correct.

13 Q Okay. Not to his original estimate?

14 A Un-ugh.

15 Q Okay. That clears that up. The statement at the
16 bottom of that page three, the last full sentence indicates
17 that the client priced Bryan estimated for the -- in the
18 preparation of the estimate, was valid at the time. Are you
19 speaking in terms of the total price or a price for a
20 particular item?

21 A Total price.

22 Q Okay. You didn't -- you didn't go back and verify
23 prices for those individual items in 1991, did you?

24 A There was no point to it. We wouldn't want to see
25 if he has enough money to build a station. Whether one

1 particular line item is different, one particular line item
2 has changed, or the specification has changed is irreverent.
3 We need to know whether he has enough money to build this
4 radio station.

5 Q Now, your next comment is that it's not good
6 business practice for a -- vendor to retain inventory. In
7 other words, to set aside equipment for particular applicant
8 such as Mr. Bryan.

9 A Well, if you were in business, what would you do?
10 Let me ask you a question. It's not a good business practice.
11 You're going to retain something in inventory for a tentative
12 process like this? It's -- for over a four or five year
13 period?

14 Q You're going to want an agreement and your going to
15 want some money to hold it and probably store it, aren't you?
16 You indicate at the end of that paragraph, this will be at the
17 top of the next page, that there's a continuing supply of used
18 equipment available to purchase.

19 A Yeah. It's not the same piece of equipment he's
20 talked about but there may be an equivalent somewhere else.
21 About the same price that we could latch on to and use in this
22 application.

23 Q There -- but you can't be -- there's no -- without
24 having -- I mean, if you don't use the equipment, there's not
25 really certainty that you're going to be able to find that

1 same piece of equipment and certainly not for the same price.

2 Is that correct?

3 A That's correct. It could be less.

4 Q Well, that's true. But there's no guaranty you're
5 going to find -- find it.

6 A No guaranty.

7 Q The --

8 A But what we're preparing here is an estimate. We're
9 not coming up with -- we're not actually going and buying the
10 stuff right away. We're getting an idea of what things cost
11 and whether there are sufficient funds here.

12 Q The -- on page four, the -- I may need to show you
13 copies of it. The comment you make in the middle -- it's the
14 middle of that paragraph, the full paragraph on page four
15 regarding the proposal -- the Continental proposal?

16 A Um-hum.

17 Q Okay. And, you said that the -- that the proposal
18 included two unnecessary transmitter spare part kits.

19 A Right.

20 Q Those are -- are not necessary but, is it not good
21 engineering practice to have spare parts on hand?

22 A That's on the station and the management. I've had
23 stations where they have no spare parts and I've had stations
24 where -- where they're coming out of the walls. It depends on
25 the installation. And these are maintenance items. These are

1 parts that we'd used under maintenance or doing catastrophic
2 failure or some other problem. To estimate what the
3 construction costs are, they have no place here.

4 Q The -- in the event the station needed the part and
5 it didn't have the spare part on hand, it would potentially be
6 off the air until the part could be ordered --

7 A That's true, but you've talked about a Continental
8 transmitter and it's Continental's policy to have a two year
9 spare parts warranty. And for two years after that, if
10 something -- if you get hit by lightening, it breaks or
11 whatever, they'll replace the part. You have a warranty on
12 the transmitter. So, for the initial phase of this
13 construction, they're going to fix it.

14 Q Well, that wasn't really -- my question was directed
15 to the fact that you would have -- you would have some -- you
16 would potentially have some off air time. Is that correct?
17 While you're waiting for the part to arrive and have it
18 installed?

19 A Depends on what's wrong. There are ways to patch
20 around the sub systems and the transmitter to get around that.
21 You could put the exciter on the air if you needed to and
22 still radiate a signal -- you'll still be on the air.

23 Q The -- the next item that you have there refer to
24 the --

25 A Um-hum.

1 Q That's a device designed to protect against
2 lightening and --

3 A It provides DC down potential at the end of the
4 antenna. It depends on your installation, again.

5 Q And, it's -- it's -- as you indicate, it's not --
6 it's not necessary for the proper operation of the station but
7 is it not an advisable piece of equipment to have?

8 A It depends on the installation.

9 Q Why, in this installation, is it not advisable?

10 A Because, you've got the beacon and the lightening
11 rod at the top. What's going to get his is the highest point
12 and the highest point is going to be that lightening rod and
13 not the antenna.

14 Q Okay. So this is -- this would be -- this is
15 something that would be used in a context where you didn't
16 have lightening rods, is that what you're saying?

17 A Possibly. Or depending on how big the tower face is
18 and in this instance this is not -- not required for proper
19 operation of the station. If you look at all the proposals
20 that most transmitter manufacturers give you, they say,
21 recommended quarter way stub. It's an option and it's an
22 option for a reason. Because some people like it, some people
23 don't. It depends on your installation whether you need it or
24 not.

25 Q The next --

1 A I've built them with and without. It doesn't
2 matter.

3 Q The next item is the -- you refer to the part that
4 was a gas -- to be used with the rigid line and pointed out
5 that the line was not a rigid line.

6 A Yeah.

7 Q The part, though, you would need a connector of some
8 sort, correct?

9 A No, not for this. The connector comes off the
10 coaxial and you have an angle, an elbow.

11 Q Well, you have to purchase -- you have to have one.

12 A You don't need this connector. It's a gas barrier
13 for a rigid piece of -- transmission line. I've got a catalog
14 here and I'll show it to you. It's not used in this
15 installation.

16 Q You have -- you would need some type of a gas
17 barrier connector, though, would you not?

18 A No. Your specification, which I'm reviewing here,
19 specified phone cable.

20 Q Yeah.

21 A Phone cable doesn't require any pressurization or
22 any kind of a gas barrier at all.

23 Q But the antenna that's used in this installation is
24 required to be pressurized.

25 A Well, how are you going to pressurize it? You could

1 run a hose up to the thing if you want to. It's not
2 necessary. You can pressurize it, you can not pressurize it.
3 You could -- the power level. It's not necessary.

4 Q You're saying it's not necessary to pressurize the
5 antenna?

6 A You can -- if it's tight, if the installation is
7 tight, they can pressurize it with a gas bottle once and be
8 done with it. The Shively antenna has a release valve on the
9 top you can replace with a straighter valve. Just pop it in.

10 Q Excuse me, I didn't -- you lost me there.

11 A The Shively antenna that I was going to use, or had
12 recommended here, has an -- inside the construction of the
13 antenna, it's two pipes that are concentrically. One is in
14 the middle and one goes around it. Now, at the top of the --
15 antennas, they have a pressure release valve. Normally, you
16 would pressurize it. I don't know why you specify that type
17 of cable, but with phone cable, there's no pressure involved.
18 If the antenna requires pressurization, that valve at the top
19 can be replaced with a bicycle type of valve. Like you have
20 on a bicycle. That's called a Schrader valve. They have them
21 that screw into these fittings and before they take the
22 antenna up they can pressurize it at that point.

23 Q So, you would -- you would pressurize the antenna
24 before you would installed it or after you installed it and it
25 would not -- it wouldn't have any -- to maintain --

1 A Some people run them, some people run them without
2 pressure.

3 Q The Shively, though is designed to be run with
4 pressure, is it not? Designed to be pressurized.

5 A It is designed to be pressurized but it is not
6 necessary. Not at this power level.

7 Q Would the warranty be any good if you didn't
8 pressurize it?

9 A You'd have to ask Shively.

10 Q So, in the installation you proposed, the proposal
11 is to use -- is it unpressurized --

12 A No pressurized.

13 Q By replacing the valve on it?

14 A No, your installation here. This is what I'm
15 reviewing in this paragraph. Uses phone cable. You don't --
16 you don't provide for that. My --

17 Q I'm really asking about the Shively now.

18 A No, the installation I provided has the proper gas
19 pressurization requirements. I specified air dielectric
20 cable, which you pressurize at the ground and then it
21 continues all the way up into the antenna.

22 Q Oh, okay. So the line you propose is it would have
23 --

24 A It would take care of it.

25 Q Okay. The -- the next item that you made reference